WHAT IS CLAIMED IS:

1. A cobalt-iron alloy film comprising an cobalt-iron alloy film having a saturation magnetization of at least about 2.30 Tesla, said film including between about 55% and about 75% iron and the remainder cobalt, said percentage being by weight based on the total weight of the alloy.

2. An alloy film in accordance with Claim 1 wherein said iron constituent is present in an amount of between about 60% and about 66%.

3. An alloy film in accordance with Claim 2 wherein said iron constituent is present in an amount of between about 62% and about 65%.

4. An alloy film in accordance with Claim 1 wherein said saturation magnetization is in the range of between about 2.32 and about 2.50 Telsa.

5. An alloy film in accordance with Claim 4 wherein said saturation magnetization moment is in the range of between about 2.38 and about 2.53 Telsa.

6. An alloy film in accordance with Claim 1 wherein said anisotropy is manifested by an easy axis coercivity of no more than about 22 Oe and which drops to no more than about 12 Oe upon annealing; a hard axis coercivity of no more than about 17 Oe which drops to no more than about 9 Oe upon annealing; and a magnetic

anisotropy of no more than 30 which is unchanged upon annealing.

7. An alloy film in accordance with Claim 6 wherein said easy axis coercivity is no more than about 17 Oe which drops to no more than about 8 Oe upon annealing; said hard axis coercivity is no more than about 7 Oe which drops to about 3.5 Oe upon annealing; and a magnetic anisotropy of no more than about 24 Oe which is substantially unchanged upon annealing.

8. An alloy film in accordance with Claim 7 wherein said easy axis coercivity is no more than about 15 Oe which drops to no more than about 6 Oe upon annealing; said hard axis coercivity is no more than about 5 Oe which drops to no more than about 2.5 Oe upon annealing; and a magnetic anisotropy of no more than about 20.5 Oe which is substantially unchanged upon annealing.

9. An alloy film in accordance with Claim 1 wherein said film has a specific resistivity in the range of about 17 and about 65 μΩ-cm.

10. An alloy film in accordance with Claim 1 wherein said film has an internal mechanical stress resistance in range of between about 250 MPa and about 800 MPa.

11. A process of making a cobalt-iron alloy film which comprises electrodepositing an alloy film from an aqueous medium which includes one or more ferrous

salts, one or more cobaltous salts, an acid which is at least one mono- or polycarboxylic acid having pKa in the range of between about 3.5 and about 5.5, a buffer which is at least one buffer having a pKa of about 6 to 8 which does not co-deposit into said alloy film and an aromatic sulfinic acid or a salt thereof.

12. A process in accordance with Claim 11 wherein said ferrous salt is a ferrous sulfate salt and said cobalt salt is a cobalt sulfate salt.

13. A process in accordance with Claim 12 wherein said ferrous sulfate and said cobalt sulfate salts are hydrates.

14. A process in accordance with Claim 11 wherein said acid is acetic acid, succinic acid, glutaric acid, methylsuccinic acid, mannitol or sorbitol.

15. A process in accordance with Claim 14 wherein said acid is acetic acid.

16. A process in accordance with Claim 11 wherein said buffer is boric acid or an alkyl-substituted pyridine.

17. A process in accordance with Claim 16 wherein said buffer is boric acid, 2-picoline or 2,6-lutidine.

18. A process in accordance with Claim 11 wherein said aromatic sulfinic acid or salt thereof is a benzenesulfinate salt.

19. A process in accordance with Claim 18 wherein said benzenesulfinic salt is a sodium salt of a benzenesulfinate hydrate salt.

20. A process in accordance with Claim 11 wherein said aqueous medium includes a surfactant.

21. A process in accordance with Claim 11 wherein said aqueous medium includes a halide salt.

22. A process in accordance with Claim 20 wherein said halide salt is sodium chloride.

23. A process in accordance with Claim 11 wherein said alloy film is electrodeposited upon an electrically conductive substrate from a wet chemical medium.

24. A process in accordance with Claim 23 wherein said electrically conductive substrate is a thin film of a nickel-iron alloy, a nickel-cobalt alloy, an iron-cobalt alloy, a cobalt-nickel-iron alloy, an iron-nitrogen alloy, an iron aluminum-boron alloy, rhodium, ruthenium, platinum, gold, copper or palladium.

25. A process in accordance with Claim 23 where said wet chemical medium includes acetic acid, boric acid, a cobalt sulfate salt, an iron sulfate salt

and an alkali metal benzenesulfinate wherein said cobalt salt and iron salt are present such that the weight ratio of iron to cobalt, based on the total iron and cobalt weight in said chemical medium, is at least about 50%.

26. A process in accordance with Claim 11 wherein said electroplating occurs at an average cathodic current density in the range of between about 5 and about 30 milliamperes per square centimeter and wherein said aqueous medium has a pH in the range of about 2.5 to about 3.5.

27. A process in accordance with Claim 26 wherein said electroplating occurs using direct current, pulsed current, cathodically biased sinusoidal current or pulsed reversed current.